IN THE CLAIMS:

1. **(Cancelled)**

2. **(Cancelled)**

3. **(Cancelled)**

4. **(Cancelled)**

5. **(Cancelled)**

6. **(Cancelled)**

7. **(Cancelled)**

8. **(Cancelled)**

9. **(Cancelled)**

10. **(Cancelled)**

11. **(Previously Presented)** An auditory screening device, comprising:

a portable hand-held enclosure;

a signal processor housed by said enclosure, said signal processor configured with a computer program operated on command by a user to produce one or more auditory tests and associated stimulus signals selected from a group comprising otoacoustic auditory emission test procedures, auditory brainstem response test procedures, tympanometry, and otoreflectance for a test subject;

a memory module housed by said hand-held enclosure, said memory module operatively connected to said signal processor and configured to maintain at least one test subject record;

a display device mounted to said enclosure, said display device being operatively connected to said signal processor for displaying results of a selected auditory test in real time;

a probe connection point on said enclosure, said probe connection point being operatively connected to said signal processor;

a power supply; and

wherein said signal processor is configured to perform a time domain sum and average over time for detecting otoacoustic auditory emission signals using an offset frame overlap method.

12. (Previously Presented) An auditory screening device, comprising:

a portable hand-held enclosure;

a signal processor housed by said enclosure, said signal processor having a computer program operated on command by a user, said program configured to produce auditory tests selected from a group comprising otoacoustic emission test procedures, auditory brainstem response test procedures, tympanometry, otoreflectance, and combinations thereof for a test subject;

a display device mounted to said enclosure, said display device being operatively connected to said signal processor, said display device displaying the results of the selected test in real time;

a probe connection point on said enclosure, said probe connection point being operatively connected to said signal processor; and

a power supply for operating the signal processor;

wherein said signal processor is configured to perform a time domain sum and average over time for otoacoustic emission test signal detection, using a frame overlap method; and

wherein said auditory screening device further comprises a memory subsystem that includes provisions for patient data.

13. (Previously Presented) The device of claim 12 wherein an auditory brainstem test signal is determined by digital signal processing and counting zero crossings of correlated internally generated sinusoids.

14. (Previously Presented) A method of conducting an otoacoustic auditory emission audio test, comprising the steps of:

inserting a probe in a patient's ear, said probe including a speaker and a microphone;

connecting said probe to a hand-held device;

generating an auditory signal in said hand-held device;

detecting incoming auditory signals generated in said ear via said microphone;

converting said incoming auditory signals to digital signal data;

storing said incoming digital signal data in a new frame buffer;

sizing said new frame buffer to be an integer number of samples of two primary tones at frequencies f_1 and f_2 and an integer number of samples of a tone produced by said ear at frequency f_{dp};

passing digital signal data from a single frame to a discrete Fourier transform process to calculate a frequency specific magnitude and phase content of said incoming auditory signal signal;

comparing said calculated magnitude and phase to a table to determine whether to reject the digital signal data, to discard the digital signal data but update a noise table; or to save the digital signal data;

collecting said digital signal data until a predetermined number of frames have been saved;

averaging said digital signal data over a predetermined number of sequential frames, wherein data from sequentially preceding frames is slid by a predetermined number of data points prior to said averaging;

converting said averaged data to a frequency domain; and

displaying said averaged frequency domain data to the user in a hand-held device in real time.

15. (Previously Presented) The method of claim 14 further including the step of saving the digital signal data internally in said hand-held device.

16. (Original) The method of claim 15 further including the step of sending to the user an indication of the subject passing or failing the test.

17. (Previously Presented) The method of claim 14 further including the step of transferring said digital signal data from said hand-held device to an external unit.

18. (Cancelled)

19. (Cancelled)

20. (Previously Presented) An auditory screening device comprising:

a hand-held enclosure;

a signal processor within said enclosure;

a memory module within said enclosure operatively connected to said signal processor;

a display screen mounted to said enclosure, said display screen being operatively connected to said signal processor;

a computer program at least partial contained in said signal processor, said computer program being accessible by a user to perform an otoacoustic emission test and an auditory brainstem response test for a test subject, said memory module maintaining a plurality of test subject records for display on said display screen; and

wherein the otoacoustic auditory emission information is recorded by frames, and information from a preceding frame is used in connection with information of a succeeding frame to reduce the signal to noise level in the received signals.

21. (Original) The device of claim 20 wherein the amount of information employed with a succeeding frame is obtained from the formula:

$$M = \left(\frac{f_n}{f_s - 1}\right) \times \left(\frac{f_s}{f_{dcl} + 1}\right)$$

where M equals overlap number, f_n equals frame number, f_s equals frame size and f_{dd} equals frame data cycle length.

22. (Previously Presented) The device of claim 21 wherein said computer program further includes tympanometry test procedures conducted independently or in conjunction with otoacoustic auditory emission and auditory brainstem response tests.

23. (Previously Presented) The device of claim 22 wherein the computer program determines data information for the brainstem response test by counting zero crossings of a sinusoid.

24. (Previously Presented) A method of conducting an auditory test in which a reduced noise ratio is obtained by:

receiving auditory signal information in frames;

making a determination to accept a frame, reject a frame and update a noise average, or to discard a frame based upon at least one predefined parameter; and

averaging data in a current accepted frame with data from at least one previous accepted frame, wherein said data from said at least one previous accepted frame is slid by a predetermined number of data points.

25. (Previously Presented) A method of conducting an otoacoustic auditory emission test in which reduced noise ratio is obtained by:

receiving otoacoustic auditory emission signal information in frames;

overlapping information from a proceeding frame for use in connection with information from a succeeding frame;

making a determination to accept the data, to reject the data but update a noise average, or to discard the data based upon predefined parameters;

wherein an overlap is determined from the formula:

$$M = \left(\frac{f_n}{f_s - 1}\right) \times \left(\frac{f_s}{f_{dcl} + 1}\right)$$

where M equals overlap number, f_n equals frame number, f_s equals frame size and f_{dd} equals frame data cycle length.

26. (Previously Presented) The method of claim 25 further including the step of conducting an auditory brainstem response test for a test subject.

27. (Previously Presented) The method of claim 26 wherein data for the auditory brainstem response test is obtained by counting zero crossings of an internally generated, correlated sinusoid.

28. (Previously Presented) The auditory screening device of Claim 31 wherein said signal processor is further configured with an otoacoustic auditory emission simulator program, whereby said signal processor is configured to generate simulated f_{dp} tones in response to tones generated by said sound transducer.

29. (Previously Presented) An auditory screening device, comprising:

a portable hand-held enclosure;

a signal processor housed by said enclosure;

at least one input/output interface housed by said enclosure and operatively coupled to said signal processor;

a memory module housed by said enclosure, said memory module operatively connected to said signal processor and configured to maintain at least one test subject record;

wherein said signal processor is configured to transmit and receive signals through said at least one input/output interface to conduct one or more auditory test procedures selected from a group comprising otoacoustic emission test procedures,

otoreflectance test procedures, auditory brainstem response test procedures, tympanometry test procedures on a test subject; and

wherein said signal processor is configured to process otoacoustic emission signals received through said input/output interface using an offset frame overlap method to reduce uncorrelated noise present in results associated with said otoacoustic emissions test procedure.

30. **(Previously Presented)** The auditory screening device of Claim 29 further including:

a display screen mounted to said enclosure, said display screen being operatively connected to said signal processor; and

wherein said signal processor is further configured to display results associated with a selected test procedure on said display screen.

31. **(Previously Presented)** The auditory screening device of Claim 29 wherein said at least one input/output interface is an otoacoustic emission interface, said otoacoustic emission interface including at least one sound transducer configured to present a variety of acoustic signals to a test subject ear, and a microphone configured to receive response acoustic signals from said test subject ear.

32. **(Previously Presented)** The auditory screening device of Claim 31 wherein said otoacoustic emission interface is further configured for otoreflectance measurements of a test subject middle ear condition.

33. **(Previously Presented)** The auditory screening device of Claim 29 wherein said at least one input/output interface is an auditory brainstem interface, said auditory brainstem interface including at least one sound transducer configured to

present an auditory stimulus to a test subject ear, and at least one electrode configured to receive response bioelectrical signals from said test subject.

34. **(Previously Presented)** The auditory screening device of Claim 29 wherein said at least one input/output interface is a tympanometry interface, said tympanometry interface including at least one electronic control channel, a pump operatively coupled to said electronic control channel for altering a pressure level in a test subject ear, and a pressure sensor configured to measure said pressure level in said test subject ear.

35. **(Previously Presented)** The auditory screening device of Claim 29 wherein said signal processor is further configured, for each auditory test procedure, to transmit at least one stimulus signal though said input/output interface.

36. **(Previously Presented)** The auditory screening device of Claim 29 further including a display device mounted to said enclosure, said display device being operatively connected to said signal processor, said display device displaying the results of said one or more selected auditory test procedures.

37. **(Cancelled)**